STATE OF LOUISIANA
OFFICE OF CONSERVATION
BATON ROUGE, LOUISIANA

December 15, 1980

AMENDMENT TO STATEWIDE ORDER NO. 29-B

Amendment concerning the use of Tables 5A and 6A, issued August, 1980, in lieu of Table 6, ASTM Designation: D 1250 - IP Designation: 200, for the purpose of correcting oil volumes for temperature to a basis of 60° Fahrenheit.

* *

Section XII, Paragraph A, of Order No. 29-B, as amended effective May 1, 1973, provides that oil volume correction for temperature to the basis of 60° Fahrenheit shall be made in accordance with Table 6 in ASTM Designation: D 1250 - IP Designation: 200.

Upon Industry's request, the Commissioner's staff has reviewed available data to determine the desirability of using Tables 5A and 6A, issued August, 1980, in lieu of Table 6 for gravity and temperature corrections of oil volumes and has made the following findings:

1. That in 1974, the API/ASTM Joint Committee on Static Petroleum Measurements (COSM) entered into a project with the U. S. National Bureau of Standards to revise Table 6 and other related Tables in Standard 2540 of the API. On September 4, 1980, the American Petroleum Institute released API Standard 2540, American Society for Testing Materials D 1250, Institute of Petroleum 200 First Edition August, 1980, which included:

Table 5A - Generalized Crude Oils Correction of Observed API Gravity at 60° F.

Table 6A - Generalized Crude Oils Correction of Volume of 60° F Against API Gravity at 60° F.

2. That old Table 6 is based on only U.S. crudes and products, some of which are no longer produced in significant volumes and is therefore out of date. The new tables were created from a data base involving a broader range of crudes and are more accurate for general use.

3. That major pipeline companies will convert in the immediate future to the use of Tables 5A and 6A for temperature corrections in the calculation of net oil volumes.

4. That presently, under Statewide Order No. 29-B, Section XII, Paragraph A, operators and pipeline companies would be required to make lease volume temperature corrections on the basis of Table 6 while selling and delivering via major pipeline companies to their customers on the basis of Tables 5A and 6A, reference Finding No. 3 hereof.

5. That other states will convert to the use of Tables 5A and 6A in lieu of Table 6 for temperature correction of oil volumes, and such a conversion in Louisiana would eliminate use of difference parameters throughout Industry.

6. That in order to achieve more accuracy, avoid confusion and possible inequities, and to make gravity and temperature corrections for oil volume consistent throughout Industry, Tables 5A and 6A should be utilized in lieu of Tables 5 and 6 as a basis for correcting oil volumes for temperatures in Louisiana.

7. That to effect an orderly change, the conversion from Tables 5 and 6 to Tables 5A and 6A should be made on January 1, 1981 and such Tables should thereafter be used for the measurement of all oil produced in Louisiana on and after January 1, 1981.

O R D E R

NOW, THEREFORE, IT IS ORDERED THAT:

1. Statewide Order No. 29-B, Section XII, Paragraph A, is hereby amended as follows:

SECTION XII - OIL AND GAS MEASUREMENTS

A. Quantities of oil shall be computed from correctly compiled tank tables and no deduction shall be taken therefrom. Corrections shall be made for temperature to the basis of 60° Fahrenheit in accordance with Tables 5A and 6A in ASTM Designation: D 1250 - IP Designation: 200. The full per centum of B.S.&W. as shown by the centrifugal or other tests shall be deducted after making correction for temperature.

This Amendment shall be effective on and after January 1, 1981.

OFFICE OF CONSERVATION
OF THE STATE OF LOUISIANA

R. T. SUTTON
COMMISSIONER OF CONSERVATION

(AFPjr/tr)

STATE OF LOUISIANA
OFFICE OF CONSERVATION
BATON ROUGE, LOUISIANA

AMENDMENT TO STATEWIDE ORDER NO. 29-B

Off-site Disposal of Drilling Mud and Salt Water
Generated from Drilling and Production of Oil and Gas Wells

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13.1 DEFINITIONS

Water-Based Drilling Muds: Any water-based fluid composed of fresh water or salt water, naturally occurring clays, drilled solids and additives for fluid loss control, viscosity, thinning, pH control, weight control, etc., for downhole rheology and stability.

Oil-Based Drilling Muds: Any oil-based drilling fluid composed of a water in oil emulsion organophillic clays, drilled solids and additives for downhole rheology and stability such as fluid loss control materials, thinners, weighting agents, etc.

Waste Drilling Muds: Any colloidal slurry composed of water-based or oil-based drilling muds, together with drilled solids, cuttings, and commingled water that will not be reused or reconditioned for sale.

Pit: An uncovered area constructed to retain waste drilling mud or salt water, often referred to as a pond or lagoon.

Commercial Facility: A waste treatment, storage or disposal facility which receives, treats, reclaims, stores, or disposes of waste drilling muds or salt water for a fee or other consideration.

Generator: The operator of record or producer of an oil or gas well who contracts with an approved commercial disposal facility for off lease disposal of his salt water and drilling mud.

Community Salt Water Disposal System: A salt water disposal system within an oil and/or gas field which is used by adjacent lease operators for disposal of their produced brine.

Salt Water (Produced Brine): Produced water from an oil and/or gas well with a chloride content greater than 500ppm.

Turnkey Operator: An agent and/or corporation that enters into an agreement with the operator of record to perform a specific task.

Closed Salt Water Disposal System: A system in which the salt water or produced brine is stored in tanks prior to being pumped through a series flow lines to an injection well to be injected into subsurface strata approved for disposal of said fluid.

Commissioner: The Commissioner of Conservation of the State of Louisiana.

13.2 DISPOSAL OF SALT WATER

A. Generator

The operator of record or producer of an oil or gas well who contracts with an approved commercial disposal facility for off lease disposal is considered the generator of any salt water produced by the well and is responsible for its proper handling, transportation and necessary documentation, as required by this Amendment to Section XV, until delivered to the approved commercial disposal facility.

B. Disposal of salt water by commercial facility must be approved by the Commissioner. Subsurface disposal is required and regulated by Section XV of Statewide Order No. 29-B. The requirements of this amendment do not apply to the community salt water disposal systems.

The Commissioner will approve an open commercial salt water disposal system providing the applicant meets the following requirements:

1. Permit Application Requirements

   a. Working and/or storage pits must not be located in a "V" or A-8 to A-30 zone as determined by maps and information published by the Department of Housing and Urban Development, Federal Insurance Administration. As conditions change and new data are made available by the Federal Government, owners of approved commercial disposal facilities will be required to update their installations. Said maps and data are on file and may be viewed by interested parties at the Office of Conservation's main office in Baton Rouge.

   b. Documentation must be presented which shows that an impermeable barrier exists at least 5 feet below the base of the pit to prevent vertical movement of fluid contained therein plus sufficient impermeable material to prevent horizontal fluid movement from the pit. This can be analyzed borings within 100 feet of the pit(s) levee(s) by an independent and qualified laboratory to be evaluated by the Office of Conservation's U. I. C. Division. This data should include (1) two borings per acre, (2) borings must be at least 10 feet below base of pit, (3) there must be at least 5 feet of clay or impermeable material below the base of the pit, and (4) clay or impermeable material must be at least 10^{-7} md permeability.

   c. A copy of the title to the disposal property shall be submitted. If a lease or other agreement is in effect on this property, a copy of this instrument shall be forwarded to the Baton Rouge office.

   d. A location plat of the disposal area in question shall be submitted.

   e. Schematic diagrams of the pits shall be submitted with design capacity.

   f. A complete statement of the proposed method, from receiving, storing and treating, will be required.

   g. A system for witnessing the receiving and sampling of waste waters at the disposal facility shall be outlined.

   h. A monitor well will be required down dip to insure that any seepage into water sands beneath the pit(s) will be detected prior to leaving the disposal site's perimeter. Monthly samples will be run and a record of the results maintained at the disposal site for inspection by Conservation field personnel.

2. Operations for Pits

   a. The pit area shall have limited access. This requirement shall be interpreted as the only possible way to the disposal pit area will be through a lockable gate system.

   b. Working and/or storage pits should have levees to a height above the 100-year high water mark and the liquid shall not exceed two feet of freeboard on the levee. The maximum amount of oil which will be allowed at any time on a pit's surface will be a 6-inch layer and unless removed, the disposal system will be shut down.

   c. A sign prominently displayed at the entry of the disposal facility is required. This sign shall state, "This non-hazardous waste disposal system has been approved for salt water disposal only and is regulated by the Office of Conservation." The sign shall also state the owner's name and current address. Any violations shall be reported to the Office of Conservation at 504/342-5595, day or night, plus weekends and holidays.

d. Disposal systems shall be operated in compliance with existing sections of Statewide Order No. 29-B which pertain to "good housekeeping" operations on oil and gas leases.

e. Commercial disposal will be accomplished during daylight hours only. During periods when an emergency exists, clearance for nighttime disposal shall be first requested and second granted by calling 504/342-5595 prior to dumping.

f. Discharges from disposal pits will be allowed only after the necessary discharge permit has been obtained from the Office of Environmental Affairs (OEA). Valves and drain lines used during said discharges will remain sealed at all times except when approved discharges are being made and the number of the "on-seal" and off-seal" shall be recorded and maintained for inspection at the facility.

g. All existing pits presently in use at disposal facilities with interim authority to operate have 90 days from the effective date of this amendment to comply with the above. Any pits under construction and not in use at said facilities at the time this amendment goes into effect cannot be put into use until they comply with the above.

3. Permit Notice Requirements

a. All operators of commercial facilities shall, at all time of application for a permit, publish a "Notice of Application for Permit" in the official state journal and the official journal of the locality in which the proposed facility is to be located, affording the public thirty (30) days in which to submit comments to the Commissioner.

b. Copies of permit applications shall be sent to local governing authorities of any municipality and parish within whose territorial jurisdiction the facility or activity is located.

c. The permit application, together with written comments from the public and involved local, parish and state agencies, shall be reviewed by the Commissioner, who shall determine the necessity for a public hearing on the permit application.

d. Notice of a public hearing on the permit application, when determined necessary by the Commissioner, shall be published in the official state journal and the official journal of the locality affected, stating: (1) the name of the applicant; (2) the nature and location of the activity, and a description and estimated quantities of waste to be handled; (3) the date and location of the public hearing, and the latest date on which written comments will be received; and (4) the name and telephone number of the person to contact for additional information.

e. A public hearing, if deemed necessary by the Commissioner, will be conducted in accordance with the provisions of Administrative Procedures Act (La. R.S. 49:951). All concerned persons may submit pertinent comments in writing or appear and testify in person.

4. Alternate Salt Water Disposal System

Should an operator request a variance from the above in the type of salt water disposal system he plans to construct, it must be an alternate equivalent system and approved by the Commissioner.

5. Manifest System

a. Every shipment of waste transported from a facility shall be accompanied by a manifest entitled "Industrial Waste Shipping-Control Ticket."

b. Generator initiates the manifest (original and four copies) by filling out his portion and the name and address of the treatment, storage, or disposal facility. After the transporter fills out and signs his portion, the generator retains one copy for his files and the original and three copies accompany the non-hazardous waste shipment.

c. Transporter secures non-hazardous waste facility operator's signature upon delivery of waste, retains one copy for his files and gives the original and two copies to the non-hazardous waste facility operator.

d. The non-hazardous waste facility operator fills out his portion, retains a copy for his files and mails the original and final copy to the generator no later than the next working day.

e. Generator files the copy and mails the final completed original to the Office of Conservation no later than seven (7) days after receiving the completed manifest from the non-hazardous waste facility operator.

f. Generator, transporter, and non-hazardous waste facility operator shall maintain file copies of manifest for a period of not less than three (3) years for Office of Conservation inspection.

g. Monthly reports shall be submitted to the Office of Conservation no later than 15 days after the end of each month.

h. Monthly reports shall contain a listing of each waste and the total amount, in barrels, handled that month.

13.3 DISPOSAL OF DRILLING FLUIDS

A. Generator

The operator of record or producer of an oil or gas well who contracts with an approved commercial disposal facility for off lease disposal is considered the generator of waste mud and drilling fluids and, as such, is responsible for its proper handling, transportation and necessary documentation, as required by this Amendment to Section XV, until delivered to the approved commercial disposal facility. This accountability may be consigned to a drilling contractor, another operator, "turnkey" operator, etc. In such cases this must be documented and made a part of the well's permanent file.

B. Commercial Drilling Fluid Disposal

Facilities will be approved when applicant complies with items in 13.2-B-1 through 13.2-B-4 and the following. (Where salt water disposal system is used in above referenced paragraphs, substitute waste mud and drilling fluids disposal system.)

1. Water-based drilling muds will be disposed of in a manner in which the solids will be allowed to settle for eventual landfill or "land-farming" procedures.

2. Oil-based drilling muds shall be handled in such a manner that solids will settle out and the water separated from the oil.

13.4 CLOSURE

All off-site commercial disposal facilities under the jurisdiction of the Office of Conservation will be closed in a manner approved by the Commissioner to insure protection of the public and environment.

13.5 BONDING

An operator shall file, as part of his application for a permit, evidence of financial responsibility for any liability for damages which may be caused to any party by the escape or discharge of any material or waste from the disposal facility. This financial responsibility may be evidenced by filing a certificate of insurance, documentation of self-insurance, or any other evidence of equivalent financial responsibility acceptable to the Commissioner of Conservation, provided, however, that in no event shall the amount and extent of such financial responsibility be less than $1,000,000.00 per occurrence and/or aggregate occurrences.

In addition, each operator shall secure and post a bond in favor of the State of Louisiana, providing for the adequate closure of his facility. The amount of said bond shall be determined by the Commissioner of Conservation and shall also include the officers and/or management of any operator. Any change in the officers or management of any operator is to be reported immediately to the Office of Conservation.

13.6 EFFECTIVE DATE

This Amendment shall be effective on and after July 20, 1980.

OFFICE OF CONSERVATION
OF THE STATE OF LOUISIANA

R. T. Sutton

R. T. SUTTON
COMMISSIONER OF CONSERVATION

JFD:lwh

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

August 26, 1974

STATE-WIDE ORDER GOVERNING THE DRILLING FOR AND PRODUCING OF OIL AND GAS IN THE STATE OF LOUISIANA.

* *

ORDER NUMBER 29-B

(Composite Order incorporating Amendments through March 1, 1974)

Pursuant to power delegated by Act 157 of 1940 and other Acts of the Legislature of the State of Louisiana, and after hearings in New Orleans on June 15th, July 27th, and August 19th, 1942, following publication of notice of hearing not less than ten (10) days prior to said meetings in the official journal of the State of Louisiana, the "STATE-TIMES" in Baton Rouge, Louisiana, the following rules and regulations are promulgated by the Commissioner of Conservation as being reasonably necessary to conserve the natural resources of the State, to prevent waste of oil and gas as defined by law, and otherwise to carry out the provisions of said Act. These rules and regulations shall govern the drilling for and producing of oil and gas or either of them in the State of Louisiana, except where these rules and regulations conflict with orders issued by the Commissioner of Conservation on specific fields.

TION I - DEFINITIONS

Unless the context otherwise requires, the words defined in this section shall have the following meanings when found in this order:

The DEPARTMENT shall mean the DEPARTMENT OF CONSERVATION of the State of Louisiana.

The DISTRICT MANAGER shall mean the head of any one of the DISTRICTS of the STATE under the DIVISION OF MINERALS, and as used, refers specifically to the Manager within whose district the well or wells are located.

The AGENT shall mean the DIRECTOR of the DIVISION OF MINERALS, the CHIEF ENGINEER thereof, or any of the District Managers or their Aides.

SECTION II - APPLICATION TO DRILL

A. All applications for permits to drill wells for oil or gas or core test wells below the fresh water sands shall be made on Form MD-10R or revisions thereof, and mailed or delivered to the District Office. These applications, in duplicate, shall be accompanied by three copies of the location plat, preferably drawn to a scale ve hundred feet (500') to the inch. The plats shall be constructed from data com- ed by a registered civil engineer or surveyor and shall definitely show the amount and location of the acreage with reference to quarter-section corners, or other established survey points. There shall also be shown all pertinent lease and property lines, leases and offset wells. When the tract to be drilled is composed of separately owned interests which have been pooled or unitized, the boundaries to and the acreage in each separately owned interest must be indicated. Plats must have well locations certifications either written on or attached to the well location plats and this certification must be signed by a registered civil engineer, qualified surveyor or a qualified engineer regularly employed by the applicant. If possible the application card shall give the name and address of the drilling Contractor, otherwise the information, as soon as determined, shall be supplied by letter to the District Manager.

B. When dual completion applications are granted, each well shall be considered as two wells. The production from each sand shall be run through separate lead lines and the production from each sand shall be measurable separately. The Department's agent shall designate suitable suffixes to the well number which will serve as reference to each producing sand.

C. No well shall be drilled, nor shall the drilling of a well be commenced, before a permit for such well has been issued by the Department of Conservation; furthermore, any work, such as digging pits, erecting buildings, derricks, etc., which the operator may do or have done, will be done at his own risk and with the full understanding that the Department of Conservation may find it necessary to change the location or deny the permit because of the rules and regulations applying in that instance.

D. No well shall commence drilling below the surface casing until a sign has been posted on the derrick, and subsequently on the well if it is a producer, showing the ownership and designation of the well, name of lease, section, township, range, and the serial number under which the permit was issued. The obligation to maintain a legible sign remains until abandonment.

In order to make the designation of the well, as referred to above, more uniform throughout the State, and thus to facilitate the handling of all matters relative to any particular well, the following system of rules has been developed for use in the naming of wells in the future in Louisiana:

1. In no case shall any operator name or well name exceed thirty (30) characters. (A space is equivalent to one (1) character.)

   a. Abbreviations shall be used whenever possible to comply with the above. It is recommended that "S" be used for sand and "U" for unit.

   b. The official well name appearing on Form MD-10-R (Application to Drill) shall be used when reporting on all Department of Conservation forms and also in any correspondence.

2. Lease Wells

   All wells drilled on a lease basis shall bear the lessor's surname and initials or given name.

Example:	LEASE NAME	WELL NO.
	J. R. Smith	#2

3. The Commissioner shall prescribe or cause to have prescribed the procedure for assigning well and/or unit nomenclature and shall issue a memorandum concerning same from time to time as the need arises.

   a. Developmental Units proposed at a hearing shall be named in accordance with the latest memorandum, and the well number shall depend on whether or not there are any other wells in existence on the lease.

   b. Any unit maps filed with an application for hearing must reflect proposed unit names in accordance with the latest memorandum.

4. Units with Alternate Unit Wells

For those cases where more than one (1) well serves the same proration unit, the wells shall be named in accordance with the latest memorandum, and the well number shall be followed by the letters "ALT" in the case of each alternate well.

Example:	LEASE NAME	WELL NO:
	Hayes SUE; J. R. Smith	#1
	Hayes SUE; Dave Luke	#1 ALT
	Hayes SUE; St. Mary	#22 ALT

SECTION III - ALL OTHER APPLICATIONS

A. All applications for permits to repair (except ordinary maintenance operations), abandon (plug and abandon), acidize, deepen, perforate, perforate and squeeze, plug (plug back), plug and perforate, plug back and side-track, plug and squeeze, pull casing, side-track, squeeze, squeeze and perforate, workover, cement casing or liner as workover feature, or when a well is to be killed or directionally drilled, shall be made to the District Office on Form MD-11R and a proper permit shall be received from the District Manager before work is started. A description of the work done under the above recited Work Permits shall be furnished on the reverse side of the Well History and Work Resume Report (Form WH), which form shall be filed with the District Office of the Department of Conservation in which the well is located within twenty (20) days after the completion or recompletion of the well. At least 12 hours prior notice of t' roposed operations shall be given the District Manager and/or an offset operator i der that one of them may witness the work. If the District Manager fails to appear within 12 hours the work may be witnessed by the offset operator, but failing in this, the work need not be held up longer than 12 hours. This rule shall not deter an operator from taking immediate action in an emergency to prevent damage.

When a service company, other than the drilling contractor, cements, perforates or acidizes, either before or after completion of a well, the service company shall furnish the District Manager with legible exact copies of reports furnished the owner of the well.

SECTION IV - RECORDS

The District Office shall be supplied with available field maps showing lease lines and well locations for all producing areas within the District, such maps to be provided by persons or companies operating in the field, on request of the Commissioner or his agent.

Electrical logs, when run, of all test wells, or wells drilled in search of oil gas sulphur and other minerals shall be mailed in duplicate to the District Office of the Department of Conservation in which the well is located, such copies to be mailed within ten (10) days after completion of the well. These logs shall be filed on the following s s:

(a) All North Louisiana Districts --
Normal Log-Two inches (2") to one hundred feet (100').

(b) All South Louisiana Districts --
Normal Log-One inch (1") to one hundred feet (100')
Detailed Log-Five inches (5") to one hundred feet (100').

The service company running the electric log on the well shall include as a f the information on the log the Permit Serial No. of the well.

A new form entitled "Well History and Work Resume Report" (Form WH) shall be filed with the District Office in which the well is located within twenty (20) days after completion of the well. This report shall be filed on forms furnished by the Department of Conservation on or like forms as reproduced by the operator.

SECTION V - CASING PROGRAM

A. Conductor Pipe

Conductor Pipe is that pipe ordinarily used for the purpose of supporting unconsolidated surface deposits. The use and removal of conductor pipe during the drilling of any oil or gas well shall be at the option of the operator.

B. Surface Casing

(1) Where no danger of pollution of fresh water sources exists, the minimum amount of surface of first-intermediate casing to be set shall be determined from TABLE NUMBER ONE hereof:

TABLE NUMBER ONE

Total Depth of Contact	Casing Required	Number of Sacks Cement	Surface Casing Test Pressure Lbs. Per. Sq. In.
0-2500	100	200 or circulate to surf*	300
2500-3000	150	500 "	600
3000-4000	300	500 "	600
4000-5000	400	500 "	600
5000-6000	500	500 "	750
6000-7000	800	500 "	1000
7000-8000	1000	500 "	1000
8000-9000	1400	500 "	1000
9000-Deeper	1800	500 "	1000

*Circulate to the Surface shall mean the calculated amount of cement necessary to fill the theorectical annular space plus ten per cent.

In known low-pressure areas, exceptions to the above may be granted by the Commissioner or his agent. If, however, in the opinion of the Commissioner, or his agent, the above regulations shall be found inadequate, and additional or lesser amount of surface casing and/or cement or test pressure shall be required for the purpose of safety and the protection of fresh water sands.

(2) Surface casing shall be tested before drilling the plug by applying a minimum pump pressure as set forth in TABLE ONE after at least 200 feet of the mud-laden fluid has been displaced with water at the top of the column. If at the end of 30 minutes the pressure gauge shows a drop of ten per cent of test pressure as outlined in TABLE ONE the operator shall be required to take such corrective measures as will insure that such surface casing will hold said pressure for thirty minutes without a drop of more than ten per cent of the test pressure. The provisions of D-7 of this Section, for the producing casing, shall also apply to the surface casing.

(3) Cement shall be allowed to stand a minimum of twelve (12) hours under pressure before initiating test or drilling plug. "Under Pressure" is complied with if one float valve is used or if pressure is held otherwise.

C. Intermediate Casing

(1) Intermediate Casing is that casing used as protection against caving of

heaving formations or when other means are not adequate for the purpose of segregating upper oil, gas or water-bearing strata.

(2) If an intermediate casing string is deemed necessary by the District Manager for the prevention of underground waste, such regulations pertaining to a minimum setting depth, quality of casing, and cementing and testing of sand, shall be determined by the Department after due hearing. The provisions of D-7 of this section, for the producing casing, shall also apply to the intermediate casing.

D. Producing Oil String

(1) Producing or oil string is that casing used for the purpose of segregating the horizon from which production is obtained and affording a means of communication between such horizons and the surface.

(2) The producing string of casing shall consist of new or reconditioned casing, tested at mill test pressure or as otherwise designated by the Department and set at a sufficient depth to cut off all gas formations above the oil-saturated horizon in which the well is to be completed. The position of the oil horizon shall be determined by coring, testing or electrical loggin, or other satisfactory method, and the producing string of casing shall be bottomed and cemented at a point below the gas/oil contact if determinable and practicable.

(3) Cement shall be by the pump-and-plug method, or another method approved by the Department. Sufficient cement shall be used to fill the calculated annular space around the casing to such a point as in the opinion of the District Manager local conditions require to protect the producing formations and all other oil and gas formations occurring above, but in every case, no less cement shall be used than the calculated amount necessary to fill the annular space to a point 500 feet above the shoe.

(4) The amount of cement to be left remaining in the casing, until the requirements of Paragraph 5 of this Section have been met, shall be not less than 20 feet. This shall be accomplished through the use of a float-collar, or other approved or practicable means, unless a full-hole cementer, or its equivalent, is used.

(5) Cement shall be allowed to stand a minimum of twelve (12) hours under pressure and a minimum total of twenty-four (24) hours before initiating test or drill plug in the producing or oil string. "Under Pressure" is complied with if one or more float valves are employed and are shown to be holding the cement in place, or when other means of holding pressure is used. When an operator elects to perforate and squeeze or to cement around the shoe, he may proceed with such work after twelve (12) hours have elapsed after placing the first cement.

(6) Before drilling the plug in the producing string of casing, the casing shall be tested by pump pressure, as determined from TABLE TWO hereof, after 200 feet of mud-laden fluid in the casing has been displaced by water at the top of the column.

TABLE NUMBER TWO
(Intermediate and Producing Casing)

Depth Set	No. of Sacks of Cement	Producing String Test Pressure (Lbs. Per Sq. In.)
2000-3000'	200) But in every case no less cement	800
3000-6000'	300) shall be used than the calculated	1000
6000-9000'	500) amount necessary to fill the annular	1200
9000-and deeper	500) space to a point 500' above the shoe	1500

If at the end of thirty minutes, the pressure gauge shows a drop of ten per cent of the test pressure or more, the operator shall be required to take such corrective measures as will insure that the producing string of casing is so set and cemented that it will hold said pressure for thirty minutes without a drop of more than ten per cent of the test pressure on the gauge.

(7) If the Commissioner's agent is not present at the time designated by the operator for inspection of the casing tests of the producing string, the operator shall have such tests witnessed, preferably by an offset operator. An affidavit of test, on the form prescribed by the Department of Conservation, signed by the operator and witness, shall be furnished to the District Office of the Department of Conservation showing that the test conformed satisfactorily to the above mentioned regulations before proceeding with the completion. If test is satisfactory normal operations may be resumed immediately.

(8) If the test is unsatisfactory, the operator shall not proceed with the completion of the well until a satisfactory test has been obtained.

E. Tubing and Completion

(1) All flowing wells shall be produced through tubing not larger than two and one-half (2 1/2) inches, unless otherwise allowed by the Department, upon application.

(2) A valve, or its equivalent, tested to a pressure of not less than the calculated bottomhole pressure of the well, shall be installed below any and all tubing outlet connections.

(3) When a well develops a casing pressure, upon completion, equivalent to more than three-quarters of the internal pressure that will develop the minimum yield point of the casing, such well shall be rquired by the District Manager to be killed, and a tubing packer to be set so as to keep such excessive pressure of of the casing.

F. Well-Head Connections

(1) Well-head connections shall be tested prior to installation at a pressure indicated by the District Manager in conformance with conditions existing in areas in which they are used. Whenever such tests are made in the field, they shall be witnessed by an Agent of the Department. Tubing and Tubingheads shall be free from obstructions in wells used for bottomhole pressure test purposes.

SECTION VI - BLOWOUT PREVENTERS

A. All wells drilling or running casing or tubing are to be equipped with a master gate and a blowout preventer having the correct size rams or plugs installed and in first class condition, together with a flowing valve of the recommended size and working pressure. If a "fill-up" line is connected to the blowout preventer, the line shall be equipped with such valves and fittings of at least the same working pressure as the blowout preventer. If the preventer is hydraulically operated, adequate pressure shall at all times be available for efficient operations.

B. The entire control equipment shall be in good working order and condition at all times and shall meet with the test or inspection requirement of the Department.

C. If at any time, evidence indicates that the preventer is not efficient, the casing shall be blocked off below the preventer by some effective method and such repairs to the preventer shall be made as to allow it to hold the originally designated pressure test.

SECTION VI - BLOWOUT PREVENTERS
(Continued)

D. Drill strings shall be equipped with a stop-cock or some other type of drill-stem back-pressure valve for the purpose of controlling back-flow.

E. No casing shall be perforated until adequate control equipment has been installed and in good working order. Such control equipment shall consist of Master Valve and Lubricator, or their equivalent.

SECTION VII - CASING-HEADS

A. All wells shall be equipped with casing - heads with a test pressure in conformance with conditions existing in areas in which they are used. Casing-head body, as soon as installed shall be equipped with proper connections and valves accessible to the surface. Reconditioning shall be required on any well showing pressure on the casing-head, or leaking gas or oil between the oil string and next larger size casing string, when, in the opinion of the District Managers, such pressure or leakage assume hazardous proportions or indicate the existence of underground waste. Mud-laden fluid may be pumped between any two strings of casing at the top of the hole, but no cement shall be used except by special permission of the Commissioner or his agent.

SECTION VIII - FIRE HAZARDS

A. 1. All wells shall be cleaned into a pit, barge, or tank, located at a distance of at least 100 feet from any fire hazard.

2. Before any well shall be perforated, the drilling fluid in the well shall be conditioned and brought to a weight necessary to hold the normal hydrostatic pressure at the point to be perforated with a reasonable margin of safety; provided, however, in cases where the tubing and Christmas Tree are set for production, the weight of the drilling fluid may be reduced below that weight necessary to hold the normal hydrostatic pressure at the point to be perforated. Before perforating, proper connections for lubricating the gun in and out of the hole shall be installed.

3. (a) All drill stem tests shall be started and completed during daylight hours except in fields where from bottomhole pressures and other information it is known that the pressure does not exceed the pressure of a column of oil from top to hole to the producing horizon. "Started and Completed" shall mean the opening and the closing of the drill stem testing tool valve or valves controlling the flow through the choke.

(b) In the absence of special prior permission from the Department, no drill-stem test shall be conducted with chokes larger than 1/4" on both top and bottom.

4. All wells shall be swabbed or bailed during the daylight hours except in cases of low pressure wells as above (A-3).

B. No boiler, open fire, or electric generator shall be operated within 100 feet of any producing oil or gas well, or oil tank.

C. 1. Each permanent oil tank or battery of tanks that are located within the corporate limits of any city, town or village, or where such tanks are closer than 500 feet to any highway or inhabited dwelling or closer than 1000 feet to any school or church, or where such tanks are so located as to be deemed a hazard by the Commissioner of Conservation, must be surrounded by a dike (or fire-wall) or retaining wall of at least the capacity of such tank or battery of tanks, with the exception of such areas where such dikes (or fire-walls) or retaining walls would be impossible

SECTION VIII - FIRE HAZARDS
(Continued)

such as in water areas. At the discretion of the Commissioner of Conservation, fire-walls of 100% capacity can be required where other conditions or circumstances warrant their construction.

2. In water, swamp or marsh areas, where the building of fire-walls is impossible or impracticable, in the future, permanent tanks shall be placed on an impervious platform surrounded by a metal gutter to catch all the oil and other waster which may cause either a fire-hazard or pollution. A sump shall be provided to catch the run-off from the gutters; however, if the operator or company has devised a plan which serves the same purpose, the District Manager may after being presented with the plan, waive the above requirements.

3. Tanks not falling in the above categories (Sub-Paragraphs C-1 and C-2) must be surrounded by a retaining wall, or must be suitably ditched to a collecting sump, each of sufficient capacity to contain the spillage and prevent pollution of the surrounding areas.

D. All gas vents from oil tanks shall terminate outside of the fire-wall.

E. Any rubbish or debris that might constitute a fire hazard shall be removed to a distance of at least 100 feet from the vicinity of wells, tanks, and pump stations. All waste shall be burned or disposed of in such a manner as to avoid creating a fire hazard or polluting streams and fresh water strata.

F. Each operator shall so conduct his operations and maintain his equipment as to reduce to a minimum the danger of explosion or fire, and consequent waste.

SECTION IX - DRILLING FLUIDS

The Inspectors and Engineers of the Department of Conservation shall have access to the mud records of any drilling well, except those records which pertain to special muds and special work with respect to patentable rights, and shall be allowed to conduct any essential test or tests on the mud used in the drilling of a well. When the conditions and tests indicate a need for a change in the mud or drilling fluid program in order to insure proper control of the well, the District Manager shall require the operator or company to use due diligence in correcting any objectionable conditions.

SECTION X - WELL ALLOWABLES AND COMPLETION

A. New Well and Re-Completed Well Allowables

1. Upon completion or re-completion of a well, immediate notice within 24 hours from the time of completion (Sundays and Holidays excepted) must be filed in writing with the District Office on forms provided by the Department. Notice of completion or recompletion of a well may be made by telephone or telegram to the District Manager if supplemented by written notice on proper form within three days from the date of completion or recompletion. Wells shall be considered completed when turned into the tanks. A potential and gas/oil ratio test shall then be conducted by the operator or company, and witnessed by an Inspector of the Department within five (5) days from the date of completion or recompletion (Sundays and Holidays excepted.)

2. After receipt of the completion reports and reports or tests required by the Commissioner, a completed or re-completed well shall be given a daily allowable, determined in the same manner as was used in computing the schedule of daily allowables for the months in which such completion is made.

3. The daily well allowable when determined shall be effective from 7:00 A. M. on the date of completion or re-completion if the well is completed or re-completed before 7:00 P. M.; and from 7:00 A. M. of the following day if the well is completed or re-completed after 7:00 P. M.; provided the completion or re-completion report has been filed in accordance with the above mentioned provisions, and if the initial potential and gas/oil ratio test has been made within five (5) days from the date of completion or re-completion. If the completion or re-completion is not reported as provided, then the daily well allowable shall be effective from the date of receipt of the completion or re-completion report, with a one-day tolerance. If the initial potential and gas/oil ratio test is not made within five days from the date of completion or re-completion, the daily well allowable shall be effective as of the date of request by the operator for an Inspector of the Department to witness the said test.

B. Allowables given to wells for oil produced on drill-stem tests, production test and any miscellaneous production of oil shall be in accordance with the following rules:

All operators are required, within five days, to file three signed copies of the ords of the daily production from the well, showing the number of hours the well produced and the interval of production; as "from 8:00 A. M., August 5th to 3:00 P. M., August 8th, 1941."

C. All leases are to be so equipped as to permit the determination of gas/oil ratios on individual flowing and gas-lift wells. Gas/oil ratio data on all wells shall be available to the Inspector of the Department at all times.

D. No flowing and/or gas-lift oil wells shall be permitted to produce with excessive gas/oil ratio, except where special orders are operative. Wells that are gas/lifted with gas from gas wells shall be prorated in the same manner as are hi-ratio naturally flowing oil wells, the G. O. R. being defined for this purpose as the total output gas less the total input gas divided by the number of barrels of oil produced. The uneconomic or unreasonable use of gas for gas-lift will not be permitted.

E. 1. Each lease shall be provided with sufficient tankage or meters to permit proper gauging of the oil produced. The tanks or meters must be identified by a sign showing the ownership of the tanks or meters and name of the lease from which the oil is being produced. In no case shall meters be the sole means of measuring oil runs from any field. There must be used at least one gauge tank to check the reading of meters. Applications for the use of oil meters in lieu of gauge tanks, shall be the subject of open hearings until rules are formulated.

2. All flowing and gas-lift oil wells are to be produced through efficient operating separators, except in the case of low-pressure headings of gas-lift wells with low-gas output.

3. All oil meters and by-pass settings shall be provided with the necessary connections to permit the installation of seals and such seals shall be affixed by the operator. A record shall be kept on file and available for inspection by any Agent of the Department or any party at interest for a period of not less than three (3) years, which reflects the oil meter seal number, the date and time the oil meter is sealed, the date and time the seal is broken and the reason for breaking the seal. To obviate the necessity of affixing oil meter seals, oil meters with non-resettable counters may be used.

SECTION X - WELL ALLOWABLES AND COMPLETION
(Continued)

4. When it becomes necessary to use a by-pass or other flow-line connection which the operator has been required to seal or which has been sealed by the Department, permission to use same must be obtained from the District Manager. In the event that an unforeseen emergency requires the use of by-pass or flow-line connections before notification to the District Office, a detailed, written report, in duplicate, setting forth the occasion for such action must be given, and the by-pass or other connection shall forthwith be re-sealed.

F. In the event that any operator considers that his well has not had a fair determination of its gas/oil ratio, or that its gas/oil ratio has changed due to natural causes or to corrective work on his well, he may make application in writing to the District Manager for a re-test or a special test of the gas/oil ratio of his well, and for an adjustment of the allowable of his well. If, upon retesting a well, the District Manager finds that the new gas/oil ratio justifies a change in the allowable, he is authorized to make such change.

G. Changed or corrected allowable shall be effective from the date of completion of such work, but in no case shall the effective date be before the date of request by the operator to the District Manager for a re-test or a special test.

H. Gas wells shall not be tested by the "open-flow" method. The back-pressure method of determining the open flow, as outlined by the Bureau of Mines in their Monograph 7, "Back Pressure Data on Natural Gas Wells" shall be used. When, for any reasons, the back-pressure method is not feasible, an acceptable method, not entailing excessive physical waste of gas, may be used, upon recommendation of the technical staff of the Department.

I. It is recognized that wells capable of producing their daily oil allowable may underproduce one day and overproduce another day during the period of an allowable schedule; however, such deficiencies as occur in this manner may be made up by excess production from the same well on the succeeding days during the period of that schedule, or such overproduction may be adjusted by underproduction on the succeeding days during the period of that schedule; provided, however, that no well shall produce in any one calendar month more than the total daily allowable per well multiplied by the total number of days in the calendar month; however, in order to provide working stocks of oil and to facilitate the production and gathering of oil including testing, bottomhole pressure survey, et cetera, the production and possession of a quantity of oil in the lease storage not exceeding three (3) days current allowable production for the lease at the end of the month in excess of the total monthly allowables, as determined in accordance with the provisions of the production and proration order, shall not be construed to be a violation of said order.

The authorization of production and possession of a quantity of oil not exceeding three (3) days current allowable production shall not be construed to be the granting of authority to any operator to offer to a market, or market, or any transporter to transport any quantity of oil in excess of the quantity specifically determined to be the total monthly allowable for each respective lease whose allowable shall have been determined by the summation of the monthly quantities determined by the multiplication of the quantity shown in the allowable schedule times the days of the month for which said allowable is effective plus or minus any allowable additions or cancellations multiplied by the days which either or both may be effective during the period covered by the schedule.

SECTION XI - PRODUCTION, PRODUCTION RECORDS, PRODUCTION TESTS

A. All oil tendered to any transportation system shall be gauged and tested for B. S. &W. and temperature. For each and every transfer of oil from the lease tanks the number of the "on-seal" and "off-seal" observed temperature, and the per cent of B. S. &W. shall be recorded on each and every run ticket, and each party

SECTION XI - PRODUCTION, PRODUCTION RECORDS, PRODUCTION TESTS (Continued)

of any transfer of oil from lease tanks shall receive a copy of the run or delivery ticket or tickets.

B. 1. There shall not be any simultaneous movement of oil into and out of any lease tank that is being used for delivering oil to a gatherer or transporter. Transfer of oil or gas from the possession of one lease to the possession of another lease, except when properly accounted for, is hereby prohibited.

The possession of improper mechanical means for transferring oil from one lease tank or well to the lease tank or well of another lease is hereby prohibited.

2. All pipe line outlets from lease tanks shall be kept sealed at all times except when a pipe line run is being made from the tank, and the number of the "on-seal" and "off-seal" shall be recorded on each and every run ticket.

3. B. S. & W. bleed-off lines of lease tanks shall be sealed or locked at the time any pipe line run is being made.

4. Oil produced from separately owned leases, not pooled, unitized or consolidated shall not be commingled in lease tanks.

5. All leases having more than one producing well shall be equipped with a test line, so as to obviate the necessity of spudding in wells when taking individual well tests.

C. Producers shall keep the following records in the main office for a period of three years and the current records in the field office for three months.

1. The monthly production in gross barrels produced from each lease and tank into which the oil was produced. A record of choke, % B. S. & W., tubing pressures, and casing pressures of each oil well on that particular lease shall be recorded on a monthly basis, and if a choke is changed the date of such change shall be recorded on the monthly record. If a well is put on production, either initially or returned to production after cessation of production, during the monthly period preceding the date of the record, the date the well was put on production shall also be recorded on the monthly record.

2. A record of stock on hand on the first day of each month.

3. A record of all deliveries of oil from the lease, to whom made, and the identity of the means of transportation, and the transporter.

4. Gauge tickets, and run tickets, as made by the employees actually performing or directing the operations recorded on such records.

D. 1. Every producer shall make and report to the District Managers production tests of each of his oil wells by the 10th of February, April, June, August, October and December. The data collected shall include the daily rate of production, size choke, % B. S. & W., tubing pressure, casing pressure, gravity at 60° Fahrenheit, or observed gravity and temperature, gas/oil ratio and volume of gas produced, which shall be recorded on the daily gauge report on or before the above date. A signed record of such tests shall be filed with the District Manager.

SECTION XI - PRODUCTION, PRODUCTION RECORDS, PRODUCTION TESTS (Continued)

2. When any well or wells shall go off production other than because of ordinary maintenance operations, same shall be reported to the District Office immediately and a letter of cancellation of allowable for that well shall be issued.

SECTION XII - OIL AND GAS MEASUREMENTS

A. Quantities of oil shall be computed from correctly compiled tank tables and no deduction shall be taken therefrom. Corrections shall be made for temperature to the basis of 60° Fahrenheit in accordance with Table 6 in ASTM Designation: D 1250 - IP Designation: 200. The full per centum of B. S. &W. as shown by the centrifugal or other tests shall be deducted after making correction for temperature.

B. Combined Correction Tables for making both temperature and B. S. &W. correction at the same time may be used, if the combined tables are based on the above mentioned Abridged Volume Correction Table for Petroleum Oils, and if the factors are calculated in such a manner that they give the same results as would be obtained by making the temperature correction and the B. S. &W. deduction separately.

C. A cubic foot of gas is hereby defined as that amount of gaseous hydrocarbons contained in a cubic foot of space at the base temperature of 60° Fahrenheit and an absolute pressure of 14. 4 lbs. /sq. in. plus 10 oz. /sq. inch, which temperature and pressure are referred to as the base temperature and pressure, respectively.

D. Basic orifice coefficients used in the calculation of gas flow shall be those contained in the American Gas Association's Gas Measurement Committee Report No. 1 and No. 2, or some other basic orifice coefficients generally accepted in the industry and approved by the Department of Conservation such as those published by the Foxboro Company, American Meter Company, and Pittsburg Equitable Meter Company. Corrections for base pressure, base temperature shall be made. Corrections for supercompressibility are recommended when equal to or greater than one per cent (1%) in cases where data are available, Corrections for Reynolds number and expansion factor are recommended only in cases where their combined correction is equal to or exceeds one per cent (1%).

E. Gas Measurements with Pitot Tubes shall be based on Reid's formula and shall follow recommendations similar to those set forth in Appendix 4 of the Bureau of Mines Monograph 7. Corrections for base pressure, base temperature, shall be made as in orifice measurements.

F. Gas measurements with orifice Well Tests shall follow recommendations similar to those set forth in Bulletin # E-7 of the American Meter Company. Corrections for base pressure and base temperature, and gravity shall be made as in orifice measurements.

SECTION XIII - DELEGATION OF AUTHORITY

It is the duty of the Commissioner of Conservation, or his Agents, to make such changes in the monthly production and proration orders as may appear reasonably necessary for the purposes of safety, conservation, the prevention of waste, or the maintenance of proper gas/oil ratio, in accordance with the orders and regulations of the Department.

SECTION XIV - BOTTOM HOLE PRESSURE

The Commissioner shall have the authority to require bottom-hole pressure surveys of the various fields at such times as he may designate. However, operators shall be required to take bottom-hole pressures in those wells only which are not likely to suffer any injurious effects therefrom. Tubing and tubingheads shall be free

SECTION XIV - BOTTOM HOLE PRESSURE
(Continued)

from obstructions in wells used for bottom-hole pressure test purposes.

SECTION XV - POLLUTION CONTROL

1. No waste oil or oil field waste shall be disposed of into any stream, lake or other body of water or into any ditch or surface drainage depression leading to any stream, lake or other body of water. Such waste shall be retained for proper disposal.

2. Produced salt water shall be disposed of into subsurface formations not productive of hydrocarbons, except:

(a). It may be disposed of in pits where such method and pits have been approved by the Commissioner of Conservation.

(b). It may be disposed of in tidally affected waters, brackish waters or any other waters unsuitable for human consumption or agricultural purposes.

3. Produced salt water shall not be disposed of into a zone producing or productive of hydrocarbons unless such disposal is approved by the Commissioner of Conservation after a public hearing or unless prior approval has been granted to use the proposed zone for salt water disposal.

4. Prior to disposing of salt water by injecting same into any subsurface formation a permit therefor must be obtained from the Commissioner of Conservation. Such permit may be issued by the Commissioner without a public hearing when the applicant has complied with the following requirements:

(a). Application (in the form of a letter) for a permit for underground disposal of salt water produced from oil and gas wells shall be submitted in duplicate to the appropriate District Manager. Such application shall include or be accompanied by:

1. An electrical log of the well with the proposed zone marked in the case of a well already drilled. A statement of the proposed zone to be used for disposal and the approximate depth of said zone in the case of undrilled wells.

2. A plat showing the location, or proposed location, of the disposal well.

3. A statement of estimated daily volume of salt water to be injected.

4. A statement of other known instances in which the proposed disposal zone has been used for salt water disposal.

5. A statement by the applicant that such disposal well will be completed in a manner to insure that the disposal products are injected into the proposed injection zone and that provision has been made for adequate protection of fresh water sands and other zones of commercial value. A schematic diagram of the disposal well showing the casing and cementing program shall be attached together with an explanation thereof. Where only one string of casing protects fresh water sands, a packer shall be set on tubing at a depth below fresh and brackish water sands, or some other method of completion which would insure adequate protection of fresh water sands. Adequate provision must be made to insure that the casing is set below the base of fresh and brackish water sands.

SECTION XV - POLLUTION CONTROL
(Continued)

5. A permit for annular disposal of salt water may be issued for an interim period of one (1) year provided the applicant has complied with the procedure outlined herein.

6. In areas of questionable sand or zone correlations, (typical example being the Wilcox Zone) an operator desiring to dispose of salt water into one such zone, shall first consult with all offset operators in the field in an effort to resolve the correlations. Should these operators agree that the zone sought for injection of salt water is not connected with or a part of a hydrocarbon bearing sand, such operator may obtain authority from the Commissioner of Conservation through administrative procedure for disposal into such sand provided the application is accompanied with evidence of concurrence by said offset operators. Should these operators fail to agree then the operator seeking such authority may make application for public hearing as provided for in section 3 hereof.

7. The Louisiana Geological Survey shall check each permit application and advise in writing the appropriate District Manager, the Baton Rouge Office and the applicant of approval or denial. If denied, the reason for denial shall be given. The District Manager will issue the Work Permit when approval is granted.

8. The Commissioner of Conservation shall cause an inspection to be made of each completed disposal facility to insure compliance with this Amendment. A copy of the inspection report shall be left with the operator or his field representative.

9. If any request for permit is denied by the Commissioner of Conservation, the applicant shall be granted a reasonable period of time to either construct or make arrangements for other adequate disposal facilities.

10. A reasonable estimate of the amount of salt water injected annually into each disposal well shall be reported to the Louisiana Geological Survey with a copy to the appropriate District Manager, such report to be filed during the first quarter of the next calendar year. This shall not be applicable to secondary recovery projects where the amounts injected are already required to be reported to the Department of Conservation.

11. Exceptions to this Amendment may be granted without a public hearing upon written request by an operator to the Commissioner of Conservation and upon showing that good cause therefor exists. Such exceptions may be granted administratively provided that inspection of the disposal facilities does not disclose any salt water damage or pollution. If pollution or surface damage is detected, production from the well or wells shall cease until compliance with the provisions of this Amendment is accomplished and the Commissioner of Conservation then grants the exception requested.

12. This Order shall supersede Department of Conservation Orders Nos. 217-C, 593-8, 632-1, 703 and 720. Any existing special orders authorizing disposal of salt water under conditions which do not meet the requirements hereof shall be superseded by this Amendment and the operator shall obtain authority for such disposal after complying with the provisions hereof.

SECTION XVI - DEFICIENT WELLS

In the event a well does not have the capacity to produce its total allowable then it shall produce such amount of oil and gas less than its allowable that it is able to produce, and the deficiency of such well shall not be made up by the overproduction of any other well.

SECTION XVII - MONTHLY REPORTS

The producing, transporting, storing and/or refining of oil shall be reported in accordance with Order No. 25, or as it may be amended, or superseded. The length of time reports and other pertinent data, as defined by Section 16 of Act 157 of the Regular Legislative Session of 1940, shall be kept on file by operators and companies in their offices, and available for inspection by an Agent of the Department of Conservation, shall in no case be less than a period of three (3) years.

SECTION XVIII - DIRECTIONAL DRILLING AND WELL SURVEYS

1. Except as otherwise provided in this Section, every well drilled in the State of Louisiana shall be drilled in such a manner that at any measured depth the actual or apparent location of the well bore shall be within a circle whose center is the surface location and whose radius is equal to said measured depth multiplied by the factor 0.087156. The actual or apparent resultant deviation of the well bore from the vertical shall not be in excess of five degrees (5^{o}) at any measured depth. In the event a survey indicates that the well bore is outside the above circle at any measured depth, the well bore must be straightened and drilling may continue only within the specified limit. A directional survey shall be required and shall be filed with appropriate District Manager as confirmation that the well bore has been straightened and is in fact within the above limit.

After an operator has commenced drilling a well and desires to change the bottomhole location by directionally controlling and intentionally deflecting said well from the vertical whether more or less than five degrees (5^{o}), unless done to straighten the hole or to sidetrack junk in the hole or because of other mechanical difficulties, he shall first make application for an amended location showing by attached plat the amended projected bottomhole objective and secure an amended permit to drill before commencing such operations. The amended bottomhole location or objective shall comply with all minimum distances from lease or property lines as prescribed by all Statewide Orders or any other applicable field orders.

In the event a well is to be drilled at a distance from a property line where such distance is less than the apparent resultant lateral deviation, as determined by multiplying the proposed total depth of the well by the factor 0.087156, a Permit to Drill for Minerals will be issued with the understanding that the operator will be required to furnish the appropriate District Manager with Inclination and/or Directional Survey data as proof that the well will be completed in compliance with the provisions of this Order before an allowable is assigned to said well.

2. An INCLINATION SURVEY shall be made on all wells drilled in the State of Louisiana with the first shot point at a depth not greater than that of the surface casing seat and succeeding shot points not more than one thousand feet (1,000') apart. Inclination Surveys conforming to these requirements may be made either during the normal course of drilling or after the well has reached total depth. Such survey data shall be certified by the Operator's representative and/or drilling contractor and shall indicate the resultant lateral deviation as the sum of the calculated lateral displacement determined between each Inclination Survey point assuming that all such displacement occurs in the direction of the nearest property line. If a Directional Survey determining the bottom of the hole is filed with the Commissioner of Conservation upon completion of the well, it shall not be necessary to furnish the Inclination Survey data.

Except as otherwise specified herein, all inclination and/or directional survey data shall be filed along with Form WH (Well History).

3. A DIRECTIONAL SURVEY shall be run and three (3) certified copies thereof filed by or at the direction of the operator with the appropriate District Manager of the Department of Conservation on all future wells drilled in the State of Louisiana where:

(a) The well is directionally controlled and is thereby intentionally deflected from the vertical, or

SECTION XVIII - DIRECTIONAL DRILLING AND WELL SURVEYS
(Continued)

(b) The surface location is less than 330 feet from the nearest property line, and the well is drilled below a depth of 3,786 feet, or

(c) The resultant lateral deviation as calculated from Inclination Survey data is a distance greater than the distance from the center of the surface location of the well bore to the nearest property line, or

(d) The well bore diviates laterally a resultant distance greater than that determined by a five degree (5^{o}) angle from a vertical line passing through the center of the surface location of the well bore.

Property Line, as used herein, shall mean the boundary dividing tracts on which mineral rights, royalty rights or leases are separately owned except that where a unit as defined in Section 9, Paragraph B, of Revised Statutes of 1950, has been created, the boundaries of the unit shall be considered the property line.

4. The Commissioner of Conservation, on his own initiative or at the request of an offset operator, shall have the right to require the operator to run a Directional Survey on any well if there is reasonable cause therefor. Whenever a survey is so required by the Commissioner at the request of an offset operator and the operator of the well and the offset operator are unable to agree as to the terms and conditions for running such survey, the Commissioner, upon request of either, shall determine such terms and conditions, after notice to all interested parties and a public hearing.

5. Unless required by the Commissioner of Conservation under Paragraph 4 hereof, a Directional Survey shall not be requied for any well which is not directionally controlled and thereby intentionally deflected from the vertical and which has a surface location, maximum angle of deviation, and total depth, all in compliance with the provisions hereof.

6. The Commissioner of Conservation may assess appropriate penalties for failure to comply with any of the provisions hereof.

7. The provisions hereof shall not alter or affect the minimum spacing provisions of Statewide Orders 29-E and 29-H or any other applicable orders.

SECTION XIX - PLUGGING AND ABANDONMENT

A. SCHEDULE OF ABANDONMENT

1. Dry Holes

All wells drilled for oil or gas and found to be dry prior to or after the effective date of this order shall be plugged within ninety (90) days after operations have been completed thereon or ninety (90) days after the effective date of this order, whichever is later, unless an extension of time is granted by the Commissioner of Conservation.

2. Other Wells on or After Effective Date of Order

a. All wells wherein production operations or use as a service well have ceased on or after the effective date of this order shall continue to be reported on the Form DM-1-R or Form DT-1 with the appropriate notation that the well is off production or no longer in

use as a service well along with the date of last production or date the service well ceased to be used; and, after six (6) months, if such a well has not been restored to production or use as a service well, it shall thereafter be reported by the Operator on the semi-annual "Inactive Well Report" (Form INACT WR-1 (1974)) which report shall be filed with the Department of Conservation showing the status of such well as of April 1 and October 1 of each year (report to be filed no later than April 25 and October 25). Such wells shall continue to be reported on the Form DM-1-R or Form DT-1 showing the date of last production or the date the well ceased to be used as a service well, together with a notation showing the well is carried on the Form INACT WR-1 (1974), "Inactive Well Report" until the well is plugged and abandoned.

b. The "Inactive Well Report" shall list the field, well name, well number and other pertinent data and provide an appropriate column to classify such well as having either 1) future utility, or 2) no future utility. If the well is classified as having future utility, Operator shall specify such utility by completing the appropriate column on the form. Wells so classified shall be reviewed periodically by the District Manager who, at his discretion, may require an Operator to supply additional information to justify the classification.

c. All such wells classified on the "Inactive Well Report" by either the Operator or the District Manager as having no future utility shall be plugged within ninety (90) days from the date of such classification unless any such well is included in a "Schedule of Abandonment" approved or promulgated by the Commissioner of Conservation or an extension of time is otherwise granted by the Commissioner of Conservation. The date any "Schedule of Abandonment" is approved or promulgated or an extension of time expires shall be shown in the appropriate column on the form.

3. Other Wells Prior to Effective Date of Order

a. All wells wherein production operations or use as a service well have ceased prior to the effective date of this order shall continue to be reported on the Form DM-1-R or Form DT-1 with the appropriate notation that the well is off production or no longer in use as a service well along with the date of last production or date the service well ceased to be used; and, after six (6) months from the effective date of this order if such a well has not been restored to production or use as a service well it shall thereafter be reported, classified and subject to review in the same manner provided for in the preceding Paragraph 2 except as hereinafter otherwise provided.

b. A well classified on the "Inactive Well Report" by either the Operator or the District Manager as having no future utility shall not be required to be plugged within a specified period of time but will be plugged in accordance with a "Schedule of Abandonment" submitted by the Operator and approved or otherwise promulgated by the Commissioner of Conservation.

4. Schedule of Abandonment

A "Schedule of Abandonment" submitted in accordance with Paragraph 2c or 3b above shall include a schedule or program for the orderly plugging of wells which should be consistent with prudent operating

practices and take into account any economic considerations and other circumstances which would affect such a program of plugging wells. Any "Schedule of Abandonment" approved or promulgated by the Commissioner of Conservation shall be followed unless modified by the Operator with approval of the Commissioner. Reference to the approved "Schedule of Abandonment" shall be made on the "Inactive Well Report" for each well which is included in such a program and has not yet been plugged.

5. Administrative Interpretation

For purposes of administering the heretofore mentioned paragraphs, it is understood that:

a. A wellbore which is completed in more than one common source of supply (multiple completions) shall not be considered as ceasing to produce and shall not be reported on the "Inactive Well Report" as long as there is production from or operations in any completion in the wellbore.

b. Wells classified as having "future utility" may be off production or shut-in but are considered to have future utility for producing oil or gas or for use as a service well.

c. No completion with a transferred allowable credit will be carried on the "Inactive Well Report."

B. The responsibility of plugging any well over which the Commissioner of Conservation has jurisdiction shall be the owner(s) of record.

C. In the event any owner(s) responsible for plugging any well fails to do so, and after a diligent effort has been made by the Department to have said well plugged, then the Commissioner may call a Public Hearing to show cause why said well was not plugged.

D. The Commissioner or his agent may require the posting of a reasonable bond with good and sufficient surety in order to secure the performance of the work of proper abandonment.

E. The District Manager shall be notified immediately by the new operator whenever a change of operator occurs. This must be accomplished by submitting Department of Conservation Form MD-10-RA (Application for Amended Permit to Drill for Minerals) to reflect the new operator.

F. PLUGGING PROCEDURES

1. Notification of intention to plug any well or wells over which the Commissioner of Conservation has jurisdiction, shall be given to the appropriate District Manager prior to the plugging thereof. Notification shall be made in writing to the District Office in the form of a WORK PERMIT (Form DM-4 Rev.) for which an original and three copies are required. Where plugging involves a well with a rig on location, the District Manager may grant verbal approval to plug and abandon the well provided the WORK PERMIT is subsequently submitted. Any operator who fails to comply with this requirement may be required by the District Manager to place additional cement plug(s) and/or prove the plug(s) are

SECTION XIX - PLUGGING AND ABANDONMENT
(Continued)

placed as the operator states they are.

2. Once an operator has been issued a WORK PERMIT to plug and abandon a well by the appropriate District Manager, then said operator shall be required to contact the appropriate Oil and Gas Inspector a minimum of twelve (12) hours prior to beginning the plugging operations. During drilling and/or workover operations, the requirement to contact the appropriate Oil and Gas Inspector a minimum of twelve (12) hours prior to beginning the plugging operations shall be waived at the time verbal notification is made to the District Office.

3. In plugging wells, it is essential that all oil or gas bearing formations be protected.

a. Sufficient cement shall be used to adequately isolate each perforated pool, one from the other. A cement plug of at least one hundred feet (100') shall be placed immediately above or across the uppermost perforated interval of the pool. If he deems it advisable, the District Manager may allow a bridge plug with a minimum of ten feet (10') of cement on top to be placed immediately above each producing pool.

b. In wells completed with screen or perforated liners, if it is impractical for the operator to remove the screen or perforated liner, he shall place a cement plug of at least one hundred feet (100') with the bottom as near as practical to the top of the screen or liner. If the District Manager deems it advisable, a bridge plug with a minimum of ten feet (10') of cement on top and placed as near as practical to the top of the screen or liner may be used in lieu of the cement plug.

c. When production casing is not run or is removed from the well, a cement plug of at least one hundred feet (100') shall be placed from at least fifty feet (50') below the shoe of the surface casing to at least fifty feet (50') above. In lieu of the above, the operator shall have the option of using a cement retainer placed at least fifty feet (50') above the surface casing shoe and a sufficient amount of cement shall be squeezed below the the retainer to form a cement plug from the base of the retainer to fifty feet (50') below the base of the surface casing. A ten foot (10') cement plug shall be placed on top of the retainer.

d. If fresh water horizons are exposed when production casing is removed from the well, or as a result of production casing not being run, a cement plug shall be placed from at least one hundred feet (100') below the base of the deepest fresh water sand to at least one hundred fifty feet (150') above the base of the sand. A cement plug of at least one hundred feet (100') shall also be placed from at least fifty feet (50') below the shoe of the surface casing to at least fifty feet (50') above it. In lieu of the above, the operator shall have the option of using a cement retainer placed at least fifty feet (50') above the surface casing shoe and a sufficient amount of cement shall be squeezed below the retainer to form a cement plug from the base of the retainer to fifty feet (50') below the base of the surface casing. A ten foot (10') cement plug shall be placed on top of the retainer.

SECTION XIX - PLUGGING AND ABANDONMENT
(Continued)

e. The setting and location of the first plug below the top thirty foot (30') plug shall be verified by tagging. In the event a retainer is used, tagging will not be necessary.

f. Additional cement plugs shall be placed to adequately contain any high pressure oil, gas or water sands or as may be required by the District Manager.

g. A thirty foot (30') cement plug minimum shall be placed in the top of the well.

h. Mud laden fluid of not less than nine (9.0) pounds per gallon shall be placed in all portions of the well not filled with cement, unless otherwise approved by the District Manager.

i. All cement plugs shall be placed by the circulation or pump down method unless otherwise authorized by the District Manager. The hole must be in a static condition at the time the plugs are placed.

j. After placing the top plug, the operator shall be required on all land locations to cut the casing a minimum of two feet (2') below plow depth. On all water locations, the casing shall be cut a minimum of ten feet (10') below the mud line. If an operator contemplates reentering the well at some future date for salt water disposal or other purpose, the District Manager may approve after receiving written request from an operator not to cut off the casing below plow depth or mud line.

k. The plan of abandonment may be altered if new or unforeseen conditions arise during the well work but only after approval by the District Manager.

4. Upon plugging any well for any cause, a complete record thereof shall be made out, duly verified and filed in triplicate on Form P&A in the District Office within twenty (20) days after the plugging of such well. A cementing report shall be filed with the plugging report.

G. WELL TO BE USED FOR FRESH WATER

When the well to be plugged may be safely used as a fresh water well and the owner or owners of the well have, by a mutual written agreement with the landowner, agreed to turn the well over to the landowner for that purpose, then the well need not be filled above the plug set below the fresh water formation; provided, however, that the signed agreement or (if recorded in the public records) a certified copy thereof be filed with the appropriate District Manager, which shall relieve the owner or owners who turn the well over to the landowner from responsibility above the plug. The plugging report shall indicate that the well has been or will be converted to a fresh water well.

H. TEMPORARY ABANDONMENT OF DRILLING WELLS

Any drilling well which is to be temporarily abandoned and the rig moved away, shall be mudded and cemented as it would be for permanent abandonment, except a cement plug at the surface may be omitted.

CTION XX - EXCEPTION AND HEARINGS

If any operator can show to the Commissioner that the drilling and producing methods herein prescribed or the particular method by him prescribed for securing tests of wells, or any other part of this order, as applies to his well or wells, result in waste or as to such operator are unreasonable, the Commissioner may enter such an order, as a special exception to the aforesaid rules and regulations, as will prevent such waste or eliminate such unreasonable restraint, as may result from the application of the aforesaid rules and regulations to the well or wells of such operators; provided, however, that before any operator shall be allowed the benefit of an order granting an exception as authorized by this Section, such operator must establish that such exception, if granted, will not result in waste in the field as a whole or give him an inequitable and unfair advantage over another operator or other operators in the field. No special exception will be granted except upon written application, fully stating the alleged facts, which shall be the subject of a hearing to be held not earlier than ten (10) days after filing of the application. Prior to the hearing upon such application, at least ten (10) days notice thereof shall be given by publication to all operators in the field. In addition to said notice by publication, adjacent operators where appropriate may be given at least ten (10) days notice of said hearing by personal service, or by Registered Mail.

SECTION XXI -APPLICATION OF SPECIAL FIELD ORDERS

This order shall be cumulative of, and in addition to, all special orders, rules [illegible] regulations affecting the drilling and production of oil and gas, as heretofore promulgated. In case of any conflict between this order and the special orders on specific fields, said special orders on specific fields shall govern.

SECTION XXII - PENALTY FOR INFRACTIONS

In accordance with the laws of the State of Louisiana, and especially Act 157 of the Legislature of 1940, any infraction of these rules and regulations may result in shutting in and sealing of any drilling or producing well or wells, tank storage or lease or leases, involved in the infraction, and prohibition of acceptance of oil or gas from such well or lease for purchasing or transporting by agent or, in the alternative, as an additional penalty, be prosecuted under Section 17 of Act 157 of 1940.

SECTION XIII - EFFECTIVE DATE

This order shall be effective from and after the 1st day of August, 1943.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA

(Sgd) Jos. L. McHugh
JOS. L. MCHUGH
COMMISSIONER OF CONSERVATION

The above Composite is hereby certified to be true and correct concerning all presently applicable provisions of Statewide Order No. 29-B as of September 1, 1974.

R. T. SUTTON
COMMISSIONER OF CONSERVATION

AMENDMENT CHRONOLOGY
OF
STATEWIDE ORDER NO. 29-B

* * * * * *

1) Section V-D, Paragraph 5 amended effective February 13, 1951.

2) Section XII - A, Amended effective January 1, 1954.

3) Section VIII - A, Paragraph 2 amended effective March 1, 1955.

4) Section II - A, Sentence 2 amended effective August 1, 1958.

5) Section III -A, Sentence 2 amended effective August 1, 1958.

6) Section IV, Paragraph 2 amended effective August 1, 1958.

7) Section IV, Paragraphs 3 and 4 added effective August 1, 1958.

8) Section XI - D, Paragraph 1 amended effective July 21, 1959.

9) Section XV, Amended effective May 16, 1961.

1 Section II-D, Amended effective August 1, 1961.

11) Section X-A, Paragraph 3 amended effective January 1, 1963.

12) Section X-6, Amended effective January 1, 1963.

13) Section X-I, Added effective January 1, 1963.

14) Section XI-C, Paragraphs 1 and 2 amended effective January 1, 1963.

15) Section XI-C, Paragraph 5 deleted effective January 1, 1963.

16) Section VIII-C, Paragraph 1 amended effective December 1, 1963.

17) Section VIII-C, Paragraph 3 added effective December 1, 1963.

18) Section XVIII, Amended effective March 1, 1967.

19) Section XV, Amended effective November 1, 1967.

20) Section XVIII-Sub-Section 1, Paragraph 1 amended effective June 1, 1969.

21) Section X-E, Paragraphs 3 and 4 amended effective June 23, 1969.

22) Section II-D, Amended effective January 1, 1973.

23) Section XII-A, Amended effective May 1, 1973.

24) Section XIX, Amended effective March 1, 1974.